

IN THE CLAIMS:

Please amend claims 1 and 6-8 as follows.

1. (Currently Amended) A method of allocating bandwidth in a first node that is operable in an ad hoc, wireless network configured to support at least one guaranteed feasible flow allocation, the method comprising the steps of:

initiating a communication between the first node and a second node in the network that, together, are endpoints of a link, the communication being related to possible bandwidth allocation adjustment of a flow sharing the link;

determining, in the first node, a first new bandwidth allocation that approaches a first optimization condition for the flow;

communicating with the second node to determine a mutually-agreed upon optimal bandwidth allocation for the flow;

notifying neighbor nodes in the network of the mutually-agreed upon optimal bandwidth allocation when reallocation is needed; and

adopting the mutually-agreed upon optimal allocation for the flow when reallocation is needed,

wherein the at least one guaranteed feasible flow allocation comprises at least one flow allocation for which a schedule exists that can realize the at least one flow allocation by taking into account flows in the ad hoc network.

2. (Original) The method of claim 1, further comprising the step of: re-performing the initiating, determining, communicating, notifying, and adopting steps at a later point in time.

3. (Previously Presented) The method of claim 1 wherein the determining step comprises determining, in the first node, the first new bandwidth allocation that approaches at least one of a Max Min Fair condition and a Quality of Service guarantee condition.

4. (Original) The method of claim 1, wherein the initiating step comprises initiating a communication between the first node and the second node in a slotted, ad hoc, wireless network.

5. (Original) The method of claim 1, wherein the initiating step comprises initiating a communication between the first node and the second node in a network on which a Time Division Multiple Access (TDMA) schedule is implemented.

6. (Currently Amended) A network device configured to allocate bandwidth in an ad hoc, wireless network configured to support at least one guaranteed feasible flow allocation, the device comprising:

a first communication unit configured to initiate a communication between the device and a node in the network that, together, are endpoints of a link in the network, the communication being related to possible bandwidth allocation adjustment of a flow sharing the link;

a first processing unit configured to determine a first new bandwidth allocation that approaches a first optimization condition for the flow, wherein the first processing unit is operably connected to the first communication unit;

a second communication unit configured to communicate with the node to determine a mutually-agreed upon optimal bandwidth allocation for the flow, wherein the second communication unit is operably connected to the first communication unit;

a third communication unit configured to notify neighbor nodes in the network of the mutually-agreed upon optimal bandwidth allocation when reallocation is needed, wherein the third communication unit is operably connected to the first communication unit; and

a second processing unit configured to adopt the mutually-agreed upon optimal allocation for the flow when reallocation is needed, wherein the second processing unit is operably connected to the first communication unit,

wherein the at least one guaranteed feasible flow allocation comprises at least one flow allocation for which a schedule exists that can realize the at least one flow allocation by taking into account flows in the ad hoc network.

7. (Currently Amended) A computer readable medium encoded with a computer program to allocate bandwidth in an ad hoc, wireless network configured to support at least one guaranteed feasible flow allocation, which, when executed, is configured to control a processor to perform:

a first sub-routine for initiating a communication between the first node and a second node in the network that, together, are endpoints of a link, the communication being related to possible bandwidth allocation adjustment of a flow sharing the link;

a second sub-routine for determining, in the first node, a first new bandwidth allocation that approaches a first optimization condition for the flow;

a third sub-routine for communicating with the second node to determine a mutually-agreed upon optimal bandwidth allocation for the flow;

a fourth sub-routine for notifying neighbor nodes in the network of the mutually-agreed upon optimal bandwidth allocation when reallocation is needed; and

a fifth sub-routine for adopting the mutually-agreed upon optimal allocation for the flow when reallocation is needed,

wherein the at least one guaranteed feasible flow allocation comprises at least one flow allocation for which a schedule exists that can realize the at least one flow allocation by taking into account flows in the ad hoc network.

8. (Currently Amended) A network device configured to allocate bandwidth in an ad hoc, wireless network configured to support at least one guaranteed feasible flow allocation, the device comprising:

initiation means for initiating a communication between the first node and a second node in the network that, together, are endpoints of a link, the communication being related to possible bandwidth allocation adjustment of a flow sharing the link;

determination means for determining, in the first node, a first new bandwidth allocation that approaches a first optimization condition for the flow;

determination means for communicating with the second node to determine a mutually-agreed upon optimal bandwidth allocation for the flow;

notification means for notifying only neighbor nodes in the network of the mutually-agreed upon optimal bandwidth allocation when reallocation is needed; and

adoption means for adopting the mutually-agreed upon optimal allocation for the flow when reallocation is needed,

wherein the at least one guaranteed feasible flow allocation comprises at least one flow allocation for which a schedule exists that can realize the at least one flow allocation by taking into account flows in the ad hoc network.